

IN THE CLAIMS

Claims 1-5 (Canceled)

6. (New) A head slider for keeping a constant flying height, comprising:

a leading edge;

a trailing edge; and

an air bearing surface formed from said leading edge, said air bearing surface including:

a front step bearing formed from said leading edge;

a rail surface formed from said step bearing;

a negative pressure recess formed between said rail surface and said trailing edge;

a center step bearing formed from said trailing edge; and

a center pad on said center step bearing,

wherein said front step bearing has a depth δ_s from said rail surface, said negative pressure recess has a depth R from said rail surface, $R/\delta_s \geq 5$, and R is a depth which corresponds to a maximum of negative pressure force.

7. (New) A head slider for keeping a constant flying height, comprising:

a leading edge;

a trailing edge; and

an air bearing surface formed from said leading edge, said air bearing surface including:

a front step bearing formed from said leading edge;

a rail surface formed from said step bearing;

a negative pressure recess formed between said rail surface and said trailing edge;

a center step bearing formed from said trailing edge; and

a center pad on said center step bearing,

wherein said center step bearing has a depth δ_s from a surface of said center pad, said negative pressure recess has a depth R from surface of said center pad, $R/\delta_s \geq 5$, and R is a depth which corresponds to a maximum of negative pressure force.

8. (New) A head slider according to claim 6, in which said center step bearing has a depth δ_s from surface of said center pad, and said negative pressure recess has a depth R from surface of said center pad.

9. (New) A head slider according to claim 6, in which said rail surface has a polygonal border in said leading edge side.

10. (New) A head slider according to claim 6, in which said rail surface is formed of divided parts.

11. (New) A head slider according to claim 10, in which said negative pressure recess is formed between said divided parts.

12. (New) A head slider according to claim 10, in which said divided parts have a skew border in said leading edge side.

13. (New) A head slider according to claim 6, in which said center step bearing has a polygonal border in said leading edge side.

14. (New) A head slider according to claim 6, in which said center pad has a polygonal border in said leading edge side.

15. (New) A head slider according to claim 7, in which said rail surface has a polygonal border in said leading edge side.

16. (New) A head slider according to claim 7, in which said rail surface is formed of divided parts.

17. (New) A head slider according to claim 16, in which said negative pressure recess is formed between said divided parts.

18. (New) A head slider according to claim 16, in which said divided parts have a skew border in said leading edge side.

19. (New) A head slider according to claim 7, in which said center step bearing has a polygonal border in said leading edge side.

20. (New) A head slider according to claim 7, in which said center pad has a polygonal border in said leading edge side.